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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,700	08/28/2003	Shinichi Ogimoto	241989US3	6749

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1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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EDWARDS, LAURA ESTELLE

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/649,700

Applicant(s)

OGIMOTO, SHINICHI

Examiner

Laura Edwards

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 9 is/are rejected.
- 7) ☒ Claim(s) 2-8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

***Election/Restrictions***

Applicant's election with traverse of Group I, claims 1-9 in the reply filed on 6/9/05 is acknowledged. The traversal is on the ground(s) that the search for the method and the apparatus would overlap such that there would be no undue burden placed on the Examiner to search both inventions. This is not found persuasive because the search for the method is separate and distinct from the apparatus as indicated by classification of the claims. Moreover, the apparatus as claimed can be used for a materially different process such as applying adhesive, polymer dispersions, and so forth using a different apparatus such as a syringe to apply the liquid manually or robotically as mentioned in the restriction requirement mailed as of 5/9/05. The restriction requirement is deemed reasonable, as the Examiner is substantially limited in examination time for the apparatus alone.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Objections***

Claims 1-9 are objected to because of the following informality: in claim 1, line 18, "sucking means;" should be changed to --sucking means;--. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilliard et al (US2002/0182316) in view of the ASPA (Admitted State of the Prior Art).

Gilliard et al teach an apparatus for applying droplets of coating liquid in a pattern on a substrate comprising a container (i.e., 620, 720) containing a source or supply of coating liquid, a coating liquid dispensing device (i.e., 630, 730) for dropping coating liquid from the source or supply on the substrate, a moving device or movable stage (i.e., 670, see pg 7, paragraph 0103) for moving the dispensing device relative to the substrate or vice versa, wherein the dispensing device enables coating liquid to be sucked via an opening out of the container corresponding to a quantity of liquid to be dropped, a temporary storage means for temporarily storing the liquid coating material, and a discharge means for discharging the liquid crystal from the temporary storage means. Gilliard et al recognize that the apparatus can be used with a variety of coating liquids (page 4, paragraph 0053) but does not explicitly teach liquid crystal. However, it was known in the coating art, at the time the invention was made, to utilize a droplet type dispenser to apply liquid crystal in a pattern on a substrate as evidenced by the ASPA (see page 1 to 2 of the Description of related art). It would have been obvious to one of ordinary skill in the art to utilize the apparatus of Gilliard et al with liquid crystal as the coating liquid because the Gilliard

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et al apparatus would enable a desired pattern of liquid crystal to be applied to the substrate. It is within the purview of one skilled in the art to utilize a known liquid droplet dispensing device for another known liquid droplet dispensing device in order to provide for the application of liquid crystal to a substrate as such would merely be substitution of one system for another in accordance with the desired coating liquid intended to be used and the desired product made.

With respect to the control of the quantity of coating liquid applied to the substrate, the device of Gilliard et al recognizes the use of ink jet technology which enables coating liquid quantity control as evidenced by the volume range of micron to nano liter range (see page 7, paragraph 0104).

***Allowable Subject Matter***

Claims 2-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 2-6 would be allowable because there is no teaching or suggestion in the prior art of a liquid crystal dropping apparatus comprising the combination of a container that contains a liquid crystal, a liquid crystal dispensing device that drops liquid crystal on a substrate, a moving device that moves the dispensing device and the substrate relative to each other, the liquid crystal dispensing device including sucking means for taking out a quantity of liquid crystal from the container corresponding to a quantity of liquid crystal to be dropped, a plurality of temporary storage means for temporarily storing liquid the liquid crystal taken out of the container by the sucking means, discharging means for discharging liquid crystal temporarily stored by the

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temporary storage means, and locating means that locates the sucking means and the discharge means relative to the plurality of temporary storage means such that a liquid crystal sucking operation of the sucking means and the liquid crystal discharging operation of the discharge means are simultaneously performed.

Claim 7 would be allowable because there is no teaching or suggestion in the prior art of a liquid crystal dropping apparatus comprising the combination of a container that contains a liquid crystal, a liquid crystal dispensing device that drops liquid crystal on a substrate, a moving device that moves the dispensing device and the substrate relative to each other, the liquid crystal dispensing device including sucking means for taking out a quantity of liquid crystal from the container corresponding to a quantity of liquid crystal to be dropped, a temporary storage means for temporarily storing liquid the liquid crystal taken out of the container by the sucking means, discharging means for discharging liquid crystal temporarily stored by the temporary storage means, and a position sensor for detecting a positional relation between the liquid crystal dispensing device and the substrate, and a controller that controls timing of a liquid crystal discharging operation of the liquid crystal dispensing device on the basis of position information about the positional relation between the liquid crystal dispensing device and the substrate provided by the position sensor and on the basis of dropping position information about predetermined positions on the substrate where the liquid crystal is to be dropped.

Claim 8 would be allowable because there is no teaching or suggestion in the prior art of a liquid crystal dropping apparatus comprising the combination of a container that contains a liquid crystal, a liquid crystal dispensing device that drops liquid crystal on a substrate, a moving device that moves the dispensing device and the substrate relative to each other, the liquid crystal

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dispensing device including sucking means for taking out a quantity of liquid crystal from the container corresponding to a quantity of liquid crystal to be dropped, a temporary storage means for temporarily storing liquid the liquid crystal taken out of the container by the sucking means, discharging means for discharging liquid crystal temporarily stored by the temporary storage means, and a controller that controls the moving device and the liquid crystal dispensing device on the basis of a relative moving speed between the liquid crystal dispensing device and the substrate and on the basis of a discharge time interval at which the liquid crystal is discharged by the liquid crystal dispensing device, the relative moving speed and the discharge time interval being determined beforehand on the basis of a drop position interval between positions where the liquid crystal is to be dropped on the substrate.

### ***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents disclose the state of the art with respect to liquid crystal dropping apparatus: Ichinose et al (JP10-142609) and Abe (US 5,507,323).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Laura Edwards  
Primary Examiner  
Art Unit 1734

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August 26, 2005